Claims

1. An isolated, substantially purified nucleotide sequence chosen from the group comprising SEQ. ID. NO. 1 – 12 and homologues thereof.

2. A nucleotide sequence which is complementary to the sequence according to claim 1.

3. A nucleotide sequence which hybridises under stringent conditions to a sequence according to claim 1.

4. A nucleotide sequence according to claim 1, wherein the homology is at least 70, 80, 90, 95 or 98 %.

5. An isolated, substantially pure nucleotide sequence induced in differentiated mammalian cells by the addition of a thiazolidinedione, such as pioglitazone, **characterized** in that said sequence is homologous to a sequence chosen among SEQ. ID. NO. 1 – 12.

6. A nucleotide sequence according to claim 5, **characterized** in that the differented mammalian cells are adipocytes.

7. A method for evaluating substances for insulin regulating properties *in vitro* in a culture of mammalian cells, **characterized** in that a sequence according to claim 1 is used as a marker for insulin regulating action.

8. Method for evaluating substances for insulin regulating properties *in vitro* in a culture of mammalian cells, **characterized** in that a transcript according to claim 5 is used as a marker for insulin regulating action

9. Method according to claim 7, **characterized** in that adipocytes are used as model cells.

10. Method according to claim 8, **characterized** in that adipocytes are used as model cells.

11. Method according to claim 7, **characterized** in that hepatic cells are used as model cells.

12. Method according to claim 8, **characterized** in that hepatic cells are used as model cells

13. Method according to claim 7, **characterized** in that muscle tissue cells are used as model cells.

14. Method according to claim 8, **characterized** in that muscle tissue cells are used as model cells.

15. Method according to claim 7, **characterized** in that pancreatic cells are used as model cells.

16. Method according to claim 8, **characterized** in that pancreatic cells are used as model cells.

17. A substance identified as having insulin regulating properties using the method according to any one of claims 7 – 16.

18. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a medicament.

19. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a veterinary preparation.

20. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a medicament for the treatment of diabetes.

21. Use of a sequence according to claim 1, or information derived therefrom, for the manufacture of a medicament for the treatment of obesitas.

22. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a medicament.

23. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a veterinary preparation.

24. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a medicament for the treatment of diabetes.

25. Use of a sequence according to claim 5, or information derived therefrom, for the manufacture of a medicament for the treatment of obesitas.

26. Use of a substance according to claim 17, for the manufacture of a medicament.

27. Use of a substance according to claim 17, for the manufacture of a veterinary preparation.

28. Use of a substance according to claim 17, for the manufacture of a medicament for the treatment of diabetes.

29. Use of a substance according to claim 17, for the manufacture of a medicament for the treatment of obesitas.

30. A pharmaceutical composition, comprising a substance according to claim 17 in a pharmaceutically effective amount.

31. A veterinary preparation, comprising a substance according to claim 17 in an physiologically effective amount.

32. An assay for the screening of substances in respect of their insulin regulating properties, **characterized** in that a sequence according to claim 1 or 5 is used as marker for insulin regulating properties.

33. A substance having insulin regulating properties, identified using an assay according to claim 32.

34. An assay for the diagnosis of IRS-2 related metabolic disorders and/or differentiating between various types or stages of the disorder, **characterized** in that a sequence according to claim 1 or information derived therefrom is used in said assay.

35. An assay for the diagnosis of diabetes and/or differentiating between various types or stages of the disease, **characterized** in that a sequence according to claim 1 or information derived therefrom is used in said assay.

36. A method for determining if a patient in need of treatment with an insulin regulating substance has the predisposition to respond to the treatment, **characterized** in that the activation of IRS-2 is measured, e.g. by determining the amount or relative increase/decrease of the IRS-2 protein, or the corresponding mRNA when administering the insulin regulating substance in question to a sample of cells taken from the patient.

37. A method for determining if a patient in need of treatment with an insulin regulating, e.g. insulin regulating substance has the predisposition to respond to the treatment, wherein at least one sequence chosen among SEQ.ID.NO. 1 – 12 is used as a marker when

administering the insulin regulating substance in question to a sample of cells taken from the patient.

38. A method according to claim 36 or 37, **characterized** in that the cells taken from the patient are chosen among blood cells, adipocyte cells, muscle cells, and liver cells.

39. A method according to claim 36 or 37, **characterized** in that the cells are blood cells.
